

Remarks

Claim Rejections – 35 USC § 103

The examiner has rejected Claims 1, 4-6 and 17-19 under 35 U.S.C. § 103(a) as being unpatentable over Sigal in view of Han. Applicant has amended Claims 1 and 17 upon one of which the remaining claims depend. As amended, this rejection is respectfully traversed and reconsideration is requested.

Applicant has amended independent Claims 1 and 17 to specify first and second clock signals that are substantially complementary and substantially non-overlapping. This is in marked contrast to the “two-phase overlapping clocking design” taught by Sigal. See Abstract. Indeed, Sigal teaches away from non-overlapping clocks by indicating that “overlapping clocks, therefore, lead to better cycle utilization.” The use of overlapping clock-pulses thus seems to be an essential requirement in Sigal in order to obtain the extension of clock-cycle time that Sigal provides for logic operations. See Abstract.

Han does not overcome this deficiency. Indeed, Han does not even appear to be concerned with the utilization of substantially complementary, substantially non-overlapping clock pulses.

As indicated above, moreover, it would not have been obvious to have combined a system that was concerned with substantially non-overlapping clock pulses with Sigal, as such non-overlapping clock pulses would appear to have frustrated the functioning of the Sigal invention.

Claims 4-6 and 18-19 are dependent upon Claims 1 or 17. These claims are also not obvious in view of Sigal and Han.

Claim Rejections – 35 USC § 102

The examiner has rejected Claims 30-31 and 35-37 under 35 U.S.C. § 102(b) as being anticipated by Sigal. Applicant has amended Claim 30 upon which the

remaining claims depend. As amended, this rejection is respectfully traversed and reconsideration is requested.

Applicant has amended Claim 30 to require substantially complementary and substantially non-overlapping clock pulses. As also discussed above, Sigal does not disclose these types of clock pulses but, to the contrary, teaches away from this. As such, Sigal does not anticipate amended Claim 30.

Claims 31 and 35-37 are dependent upon Claim 30 and are also therefore not anticipated by Sigal.

Claim Rejections – 35 USC § 103

The examiner has rejected Claims 32-34 under 35 U.S.C. § 103(a) as being unpatentable over Sigal in view of Han. Applicant has amended Claim 30, the claim upon which Claims 32-34 depend. As amended, this rejection is respectfully traversed and reconsideration is requested.

As explained above, applicant has amended independent Claim 30 to require substantially complementary, substantially non-overlapping clock pulses. As explained above in connection with Claims 1 and 17, neither Sigal nor Han teach the use of such pulses. To the contrary, Sigal specifically appears to require overlapping clock pulses in order to achieve the benefits of that invention.

The examiner has rejected Claims 38-41 under 35 U.S.C. § 103(a) as being unpatentable over Sigal. Applicant has amended Claim 30 upon which these claims depend. Applicant has also amended Claim 38 upon which Claims 39-41 depend. As amended, this rejection is respectfully traversed and reconsideration is requested.

As indicated above, applicant has amended Claim 30 to require substantially complementary, substantially non-overlapping clock pulses. As explained above, this is not disclosed in Sigal. To the contrary, Sigal appears to require overlapping clock pulses in order to obtain the benefit of his invention.

The examiner has also raised a question as to whether the language "configured to utilize an adiabatic signal" in Claim 38 is a limitation, as opposed to merely a statement of intended use. In response, applicant advises that this was intended as a limitation. To make this clearer, applicant has amended Claim 38 to specify that the system is configured to utilize an adiabatic signal "without substantially enhancing power dissipation as contrasted to when the system utilizes a substantially non-adiabatic signal." In order to accomplish this function, the clock-powered logic system must be configured in a particular manner.

The configuration disclosed in Sigal does not appear to meet this requirement. To the contrary, applicant believes that power dissipation in Sigal will rise dramatically if adiabatic signals are use. Claims 39-41 depend on Claim 38 and therefore are distinguishable for the same reason.

Claims 38-41 are also dependent upon Claim 30 which, as explained above, is also distinguishable from Sigal.

Allowable Subject Matter

The examiner has indicated that Claims 27-29 are allowable over the prior art of record. This is appreciated.

The examiner has objected to Claims 7-16 and 20-26 as being dependent upon a rejected base claim, but has stated that these claims would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Applicant has amended Claims 7 and 20 to be in independent form and to include all of the limitations of the base claim on which they previously depended. Claims 8-16 and Claims 21-26 remain dependent upon now-independent Claims 7 and 20, respectively.

Conclusion

For the foregoing reasons, it is respectfully submitted that this case is now in condition for allowance and early notice of the same is earnestly requested.

The Commissioner is authorized to charge Deposit Account No. 501946 for payment of any additional fees required by this response or to credit any overpayment to the account, and include attorney reference no. 61450-023-6806. A duplicate copy of this sheet is enclosed.

Respectfully,
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